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**IN THE MATTER OF THE
INVESTIGATION INTO QWEST
CORPORATION'S COMPLIANCE WITH
CERTAIN WHOLESALE PRICING
REQUIREMENTS FOR UNBUNDLED
NETWORK ELEMENTS AND RESALE
DISCOUNTS**

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QWEST CORPORATION'S POST-HEARING REPLY BRIEF

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I. Introduction

The Telecommunications Act of 1996 ("the Act") and the implementing regulations of the Federal Communications Commission ("FCC") *require* unambiguously that the prices for interconnection, collocation and unbundled elements be based exclusively on cost.¹ In compliance with these mandatory standards, Qwest Corporation ("Qwest") has presented Total Element Long Run Incremental Cost ("TELRIC") studies to support several hundred proposed rates. Qwest's cost studies are based specifically on the "most efficient technology *proven*" to be "*operationally feasible, currently available,*"² and "*compatible with the most basic geographical design of the existing network,*" which is the interpretation of TELRIC proffered by AT&T Communications of the Mountain States, Inc. ("AT&T") and the FCC to the United States Supreme Court.³

The inputs and assumptions used by Qwest's models are reasonable and consistent with these standards and are supported by evidence that is comprehensive, thorough and well-documented. Qwest has presented testimony from witnesses who have hands-on experience installing network facilities in Arizona and other states in Qwest's region. These witnesses provide what no others have provided in this proceeding: evidence of what is actually required to

¹ First Report and Order, *In the Matter of the Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket Nos. 96-98 & 95-185, FCC 96-325 at ¶ 620, 628-29 (rel. Ag. 6, 1996) ("*First Report and Order*").

² Reply Brief of AT&T Corp., *AT&T v. Iowa Utilities Board, et al.*, Nos. 00-590, 00-511, 00-555, 00-587, 00-682, p. 16-17 (emphasis added) (S. Ct., July 23, 2001).

³ Brief for the Petitioners Federal Communications Commission and the United States, *Verizon, et al. v. Federal Communications Commission, et al.*, Nos. 00-511, 00-555, 00-587, 00-590 and 00-602, p. 9 (emphasis added) (S. Ct., April 9, 2001).

build an efficient network using currently available technology.⁴ Similarly, the testimony of Qwest's witnesses is based on their comprehensive and real-life understanding of the types of activities that must be performed to provide these services and elements in an efficient manner. The cost assumptions that the Arizona Corporation Commission ("Commission") adopts in determining forward-looking costs should be measured against this body of experience.

In stark contrast, in their post-hearing briefs and through their evidence, the Joint Intervenor have openly advocated that this Commission should set rates in a manner that guarantees them an "acceptable" level of profits. To the extent they have filed studies, the studies invent costs that will purportedly allow this Commission to arrive at the Joint Intervenor's pre-determined rates. Their cost studies are based on a set of inputs and assumptions that have been selected to produce the lowest possible costs and, correspondingly, highest profit margins. Several examples from the Joint Intervenor's HAI model demonstrate this point:

- HAI assumes a significant increase in the amount of aerial plant used in the network. This assumption is not supported by any credible evidence and is refuted by common knowledge and evidence submitted by Qwest. AT&T presented *no* engineering witness to support this assumption. AT&T's own witness concedes that most states and municipalities do not want to see aerial plant and, in fact, are passing legislation to prohibit it.⁵

⁴ Reply Brief for Petitioners WorldCom, Inc., et al., *WorldCom, et al. v. Verizon, et al.*, No. 00-555, p. 6-7 ("TELRIC rates are calculated on the basis of the most efficient technology that is generally available and actually in use") (S. Ct., July 23, 2001).

⁵ See Hearing Transcript ("Tr.") at 1542 (Weiss Cross). The proper application of TELRIC requires that the Commission's cost determinations be supported by substantial evidence that the underlying assumptions are realistic. As both CLEC and FCC submissions to the Supreme Court make clear, forward-looking methodologies do not permit, but in fact preclude, the use of assumptions that reflect some kind of theoretical ideal that cannot or would not be followed in practice. Even AT&T is on record stating that "TELRIC simply was not intended to do anything other than measure a LEC's cost of providing its 'actual facilities.'"

- HAI assumes that the expenses associated with engineering, operating (including power) and testing the network (in other words, the costs to operate the network) will, overnight, decrease by 50%. The original support for this large reduction was discredited and withdrawn. No evidence -- engineering, expert or otherwise -- has been presented to support this assumption or to demonstrate how this halving of network operation expenses would affect service quality.
- HAI assumes that on average, Qwest will pay little more than 1/3 of the cost of placing distribution, feeder and transport cables for an all-new local network in Arizona. Current, real world outside plant experience belies this assumption, which is contradicted by other inputs and assumptions in the HAI model. For example, AT&T's own witness testified that companies typically place their facilities at different times, which makes cost sharing difficult.⁶ As discussed in Qwest's Post-Hearing Brief ("Qwest Br."), the FCC and state commissions throughout Qwest's region have repeatedly rejected this unrealistic assumption over the past five years, but the sponsors of the HAI model nevertheless continue to advocate it. Qwest Br. at 52.
- Notwithstanding applicable FCC and state commission decisions, HAI continues to overstate line counts with access line equivalents, thereby reducing the estimated cost per line.

The financial impact of even this handful of assumptions is substantial. Correcting just these flawed inputs in the HAI model increases the monthly rate for the unbundled loop by more

Brief of Petitioner AT&T Corp., *AT&T v. Iowa Utilities Board, et al.*, No. 00-590, p. 28 (S. Ct., April 9, 2001).

⁶ Tr. at 1623-24 (Weiss Redir.).

than \$5.00. Ex. Qwest-29 (Fitzsimmons Reb.) at 35. Correcting all the inaccurate inputs in the model increases the monthly loop cost by more than \$8.00. *Id.*

As Qwest demonstrated in its post-hearing brief, setting prices to guarantee profitability is flawed from a legal, policy and practical perspective. On this point, the Act and the FCC's decisions are dispositive. The FCC's decisions on this issue are not merely binding, but are also sensible and consistent with the Act.

The Joint Intervenor's cost studies and the critiques of Qwest's studies that they present in their evidence and post-hearing briefs are based on the improper premise that the Commission should set rates to ensure CLEC profitability. This flawed premise infects many of the Joint Intervenor's proposals and positions. The Commission should reject the Joint Intervenor's studies and rate proposals and should establish rates based upon the forward-looking TELRIC studies that Qwest has presented.

II. Recurring Costs and Prices for Unbundled Network Elements

A. The Appropriate Principles for Determining the Costs and Prices for Unbundled Network Elements

Qwest's post-hearing brief sets forth the unambiguous legal authority that requires the Commission to set rates for interconnection and UNEs based on the economic cost of providing services and network elements. Qwest Br. at 3-6. In their post-hearing briefs, the Joint Intervenor's continue improperly to urge the Commission to veer from this standard and to set rates that will increase the likelihood of CLECs earning profits and succeeding in the competitive market.

For example, Z-Tel argues that the Commission must establish UNE rates that will "promot[e] competition in all markets." Z-Tel Post-Hearing Brief ("Z-Tel Br.") at 3-4. Z-Tel goes so far as to suggest that the Commission must "assess each input value, assumption or resultant cost estimate according to its effect on competition." *Id.* However, the Commission's clear directive is to set rates that reflect true economic costs, not to ensure profitable returns for

competitors.⁷ The FCC could not be any clearer on this point: “[T]he Act requires that we review whether the rates are cost-based, not whether a competitor can make a profit by entering the market.”⁸

In an order issued just two days ago in connection the application of Verizon Pennsylvania, Inc. for relief under Section 271 of the Act, the FCC again emphasized the irrelevance of CLEC profitability to TELRIC-based pricing:

[W]e reject WorldCom's and AT&T's contention that competitors lack a sufficient profit margin between Verizon's retail and wholesale rates to allow local residential competition over the UNE-P, which indicates that the UNE rates are not TELRIC-based. In the *SWBT Kansas/Oklahoma Order*, the Commission held that this profitability argument is not part of the Section 271 evaluation of whether an applicant's rates are TELRIC-based. The Act requires that we review whether the rates are cost-based, not whether a competitor can make a profit by entering the market. In this case, we have conducted an analysis of Verizon's recurring UNE rates and concluded that their rates meet this requirement. Questions of profitability are independent of this determination.⁹

In support of the flawed standard that the Joint Intervenors advocate, Z-Tel incorrectly asserts that “higher UNE rates reduce competition and lower UNE rates increase competition.” Z-Tel Br. at 3. This statement is a gross oversimplification of a complex economic issue. UNE prices that are set too low will not foster long-run competition because they will discourage

⁷ Qwest's response to Z-Tel's argument is set forth in greater detail at pages 67-68 of Qwest Corporation's Post-Hearing Brief.

⁸ *In the Matter of Joint Application by SBC Communications Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region, InterLATA Services in Kansas and Oklahoma*, CC Docket No. 00-217, FCC 01-29 at ¶ 92 (rel. Jan. 22, 2001).

⁹ *In the Matter of Application of Verizon Pennsylvania, Inc., Verizon Long Distance, Verizon Enterprise Solutions, Verizon Global Networks, Inc., and Verizon Select Services, Inc. for Authorization to Provide In-Region, InterLATA Services in Pennsylvania*, CC Docket No. 01-138, FCC 01-269 at ¶ 70 (rel. Sept. 19, 2001) (“*Verizon Pennsylvania Order*”).

CLECs from investing in their own facilities.¹⁰ See Ex. Qwest-29 (Fitzsimmons Reb.) at 7. Even Dr. George Ford, Z-Tel's witness, admitted that setting UNE rates at inappropriately low levels would discourage true facilities-based competition. See Tr. at 1786-88 (Ford Cross).

In its post-hearing brief, Z-Tel reiterates that the Commission should apply the FCC's "TELRIC compliance test" in setting UNE rates. Z-Tel Br. at 5-9. However, in applying that test, Z-Tel continues to put forth the flawed analysis of Dr. Ford, who selectively applied the test to reach a desired result. While the FCC had granted Section 271 relief in five states at the time of his testimony, Dr. Ford handpicked only three states for his analysis -- Kansas, Oklahoma, and Texas, which have the lowest relative loop rates. When the other two states, Massachusetts and New York are included in the analysis, the results for Arizona are telling. As Dr. Ford acknowledged, the inclusion of all five states in the analysis yields an upper bound of approximately \$16.50 for a range of reasonableness. Tr. at 1809.¹¹

¹⁰ Z-Tel cites the following excerpt from an FCC order in support of its position. "One of the fundamental goals of the Telecommunications Act of 1996 (the 1996 Act) is to promote innovation and investment by multiple market participants in order to stimulate competition for all services" Z-Tel Br. at 4 citing *In the Matter of Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, CC Docket No. 98-146, FCC No. 99-5 at ¶ 1 (rel. Feb. 2, 1999). This excerpt supports Qwest's position, not Z-Tel's. Setting UNE rates at inappropriately low levels will not "promote innovation and investment" on the part of CLECs. Rather, below-cost UNE rates will discourage the sort of true innovation and investment that can only come through facilities-based competition.

¹¹ In the *Verizon Pennsylvania Order* issued this week, the FCC discussed the criteria for determining which states to include as benchmarks for the purpose of comparing rates under the TELRIC compliance test. It emphasized that the "most relevant" factor is "TELRIC compliance" and that the "comparison state's rates must have been found reasonable" *Verizon Pennsylvania Order* at ¶ 64.

In addition, Qwest witness, Gary Fleming, demonstrated that application of the test to rates in states that meet one or more of the comparison criteria established by the FCC produces an upper bound of \$18.21 for a range of reasonableness. Ex. Qwest-8 (Fleming Reb.) at 27-28.

B. Qwest's Recurring Cost Studies Comply with TELRIC.

As Qwest set forth in its post-hearing brief, its recurring cost studies are specifically designed to comply with TELRIC. Qwest Br. at 9-12. Staff's and the Joint Intervenors' challenges to Qwest's studies, including the claim that the studies violate TELRIC, are inaccurate.

For example, AT&T and XO argue that Qwest's studies are based on embedded costs, asserting that the maintenance and expense factors that Qwest uses are developed from the company's embedded books." AT&T/XO Post-Hearing Brief ("AT&T/XO Br.") at 5. AT&T and XO do not disclose that while Qwest's Integrated Cost Model ("ICM") does use booked expenses as a starting point for these factors, the model applies productivity and inflation factors to the booked expenses to make them forward-looking. Ex. Qwest-16 (Million Dir.) at 8. The application of these factors means that the expenses that Qwest uses in its studies differ significantly from the company's embedded costs.

AT&T and XO also fail to disclose that like ICM, the HAI model begins with Qwest's historical costs, as reported in ARMIS, as a starting point. Ex. AT&T/WorldCom-3 (Denney Dir.) at 31. However, the HAI model applies largely unexplained, unsupported reductions to those costs to produce significantly understated expenses and investment. For example, the model begins with Qwest's booked network operations expenses but reduces those expenses by 50 percent under the unexplained guise of how an "efficient firm" would operate. Ex. Qwest-29 (Fitzsimmons Reb.) at 54-57. Similarly, the HAI model begins with Qwest's booked costs relating to general support assets but arbitrarily reduces those expenses by 50 percent. Nowhere in the model or its supporting documentation is this reduction explained. *Id.* at 58.

Thus, both ICM and the HAI model use Qwest's booked costs as a starting point. A fundamental difference between the models, however, is how they adjust those costs. ICM applies productivity and inflation factors to produce forward-looking costs, while the HAI model applies many unexplained, arbitrary reductions to those costs to produce inaccurate, understated estimates of costs.

C. Staff's and the Joint Intervenor's Criticisms of Specific Recurring Cost Studies are Without Merit.

1. High Capacity Loops

High capacity loops include DS1 and DS3 capable loops. A DS1 capable loop provides a digital transmission path from a network interface in a Qwest serving wire center ("SWC") to a network interface at an end-user's premises within the serving area of the SWC. A DS3 capable loop provides a similar digital transmission path but at a higher transmission rate than a DS1 loop. The DS3 capable loop is configured as a channel on a fiber-based system. Ex. Qwest-16 (Million Dir.) at 48.

Qwest uses an adjunct of LoopMod to develop the cost of placing the copper or fiber loop between a SWC and a customer location. Tr. at 676 (Million Cross). To develop the other investment for DS1 and DS3 capable loops, Qwest uses its Network Access Channel ("NAC") Model. This model provides the investment for the optical-digital electronics and other equipment required at the customer location and the SWC for digital transmission. See Ex. Qwest-18 (Million Reb.), Ex. TKM-07R. Using these studies, Qwest develops statewide average rates for DS1 and DS3 capable loops and deaveraged rates based on the zones that Qwest has proposed for the unbundled loop. Ex. Qwest-16 (Million Dir.) at 48.

AT&T and XO argue that Qwest has overstated the costs of high capacity loops by understating fill factors, using historical information to develop the total investment factors ("TIFs") that are used in these studies, and overstating investment. AT&T/XO Br. at 19-24. Each of these arguments is flawed.

a. Qwest's High Capacity Loop Study Uses Appropriate Fill Factors.

Qwest offers multiple architectures for high capacity loops, and each type of architecture has a different utilization rate. For example, Qwest's utilization rate for DS1 plug-ins for the SONET fiber mux architecture is 97%. Other architectures that Qwest uses have utilization rates of 39%, 65%, 71%, 74%, and 100%. Ex. Qwest-18 at 28-29 (Million Reb.). In challenging Qwest's utilization rates for high capacity loops, AT&T and XO do not even mention these rates. Instead, they focus exclusively on the utilization rate of 37% for Qwest's OC3-based SONET fiber mux architecture. In doing so, they create the misimpression that 37% is indicative of the overall utilization rates in Qwest's cost studies for high capacity loops. AT&T/XO Br. at 22-23.

AT&T and XO fail to recognize the sound engineering reasons for Qwest's use of a 37% utilization rate for the OC3-based SONET fiber mux architecture. This architecture provides capacity for 84 DS1s at a given location. Demand cannot be aggregated from one location to another without adding additional OC3s. Qwest's actual utilization for OC3s is 28 DS1s out of a capacity of 84 for an overall rate of 33%. Thus, the 37% utilization rate that Qwest uses in its cost studies is higher than the rate that Qwest is actually experiencing in its network. Ex. Qwest-18 (Million Reb.) at 28-29.

AT&T and XO also ignore that with an OC3 architecture, demand across multiple locations cannot be aggregated to calculate a utilization rate. The inability to aggregate demand in this manner arises from the fact that an OC3 in a central office provides capacity for 84 DS1s *only* if an OC3 is also provisioned at the end-user location. Accordingly, while an OC3 ring architecture can be deployed to serve demand at more than one location, this architecture results in a high utilization rates in the central office but low utilization rates at end-user locations. Ex. Qwest-18 (Million Reb.) at 33-34.

Contrary to the assertions of Joint Intervenor witness, Thomas Weiss, unless there is demand for 168 DS1s in a single location, it is not possible to serve DS1 demand with only two

OC3s. Based on a sample of 3,275 locations in Arizona, the current level of end-user demand is an average of 2.09 DS1s per location. With this level of demand, it is apparent that the circumstances that would support Mr. Weiss' assumed use of only two OC3s simply do not exist in the real world. The utilization factor of 85% that he advocates could only exist in the type of imaginary network that is not the proper focus of a TELRIC study. *Id.* at 31-34.

In addition, Mr. Weiss' proposed use of a utilization rate of 85% for *all* optical and digital equipment and facilities in *all* of Qwest's recurring cost studies is seriously flawed. Different types of equipment in the network have different levels of utilization. Mr. Weiss' recommended use of the same fill rate for all equipment fails to account for these differences in levels of utilization for different types of equipment. Moreover, it is telling that Mr. Weiss could not provide a single example of a carrier achieving this level of utilization in its network. Tr. at 1575-76 (Weiss Cross). Nor did he provide the fill rates that his clients, the Joint Intervenors, have actually experienced in their networks.

b. Qwest Uses Forward-Looking TIFs in the High Capacity Loop Study.

As Qwest describes in its opening brief, TIF is a cost factor that combines all investment loadings into one factor that, when multiplied against the material investments, provides a total installed investment. Qwest Br. at 18. The methodology that Qwest follows to develop TIFs is described in Qwest's opening brief. *Id.* at 18-19.

AT&T and XO assert that Qwest's TIFs are improper because they rely on Qwest's booked expenses. AT&T/XO Br. at 23-24. However, as Ms. Million explained in the hearing, Qwest's recent experience with costs relating to installation, transportation, warehousing, power, and taxes provides a sound basis for estimating TIFs for use in a cost study. Tr. at 640 (Million Cross). The expenditures that Qwest has recently incurred for transportation of materials, for example, are likely to be very similar to the transportation expenses that Qwest will incur over the next few months or the next year. *Id.*

AT&T and XO would have Qwest disregard this recent experience and develop TIFs based on pure speculation about levels of expenditures that theoretically could be achieved in the future. They rely on the testimony of Mr. Weiss, who takes the position that a telephone company that is rebuilding the entire network will not need to store *any* equipment in warehouses and will not have to pay *any* transportation costs for equipment. These wholly unrealistic assumptions are based on Mr. Weiss' flawed premise that the replacement network "should be built instantaneously." *See* Tr. at 1599 (Weiss Cross). These assumptions also conflict directly with the Joint Intervenor's position that the recurring costs studies should include significant economies of scale to reflect the fact that the telephone company will be purchasing large amounts of equipment for the replacement network. If a telephone company buys vast quantities of equipment, as the Joint Intervenor assumes, it surely will have to transport and store some of the equipment. *See* Qwest Br. at 19.

AT&T and XO represent that the unrealistic TIFs Mr. Weiss proposes are supported by the "experience" of other telecommunications carriers. AT&T/XO Br. at 24. However, Mr. Weiss did not provide evidence of the TIFs of other carriers, and the Joint Intervenor tellingly did not provide any information about their own TIFs.

c. The Investment that Qwest Includes in the High Capacity Loop Study is not Overstated.

AT&T and XO argue further that LoopMod overstates the costs of loop facilities and, therefore, the loop investment that Qwest includes in the high capacity loop studies is overstated. AT&T/XO Br. at 20-21. Qwest addresses the Joint Intervenor's criticisms of LoopMod in the following section of this brief relating to the rate for the unbundled loop. That discussion demonstrates the inaccuracy of the Joint Intervenor's criticisms.

In conjunction with their criticisms of LoopMod, AT&T and XO suggest that the Commission could use the loop investment from the HAI model to develop costs for DS1 and DS3 capable loops. *Id.* at 20. But the HAI model does not include the necessary investment for

high capacity loops. For example, while DS3 loops can only be provided on all-fiber loops, the HAI model does not include investment for this type of loop. Thus, the HAI model cannot be used to develop investment for high capacity loops.

AT&T and XO also assert that Qwest has overstated the material costs in the high capacity loop study. They base this assertion on the fact that Qwest's current contract prices for certain equipment included in the NAC model exceed the prices that the model uses. AT&T/XO Br. at 21. As Ms. Million explained in the hearing, these differences in prices arise from the fact that Qwest updated the study in late 1998 and early 1999, but entered into an agreement with some different prices for equipment in late 1999. Tr. at 862-64 (Million Redir.). Qwest's intention is to use current prices for this equipment, and it, therefore, has no objection to substituting current prices into the NAC model where that is appropriate. *Id.*

2. Transport

In challenging Qwest's proposed recurring rates for transport, AT&T and XO repeat their flawed criticisms relating to fill factors and TIFs. AT&T/XO Br. at 25. As demonstrated above, those criticisms are inaccurate and do not provide a basis for altering Qwest's proposed rates.

AT&T and XO also assert that "there is every reason to believe" that the material prices that Qwest relied upon in calculating transport costs are overstated. *Id.* at 26. However, they do not cite any evidence to support this assertion and do not identify any specific equipment or facilities for which prices allegedly are inflated. There is no support for this claim and no basis for the 20 percent price reduction that AT&T and XO propose based on this claim.

AT&T and XO also assert that there is no basis for having a different pricing structure for unbundled dedicated interoffice transport ("UDIT") and extended UDIT ("E-UDIT"). AT&T/XO Br. at 27. However, there are sound reasons for having separate prices for these two distinct elements.

E-UDIT is comprised of the facilities that connect Qwest's serving wire centers with CLEC wire centers. By contrast, UDIT is comprised of the transport facilities that connect

Qwest's wire centers. There are significant differences between the facilities that comprise these two elements. UDIT is essentially the same as direct trunk transport ("DTT"). It consists of terminating and multiplexing equipment, fiber cable, conduit, and intermediate wire center equipment. E-UDIT is comprised of outside plant facilities and is closely analogous to entrance facilities.

Because different facilities are used for E-UDIT and UDIT, these products have different cost structures. The study that Qwest submitted for E-UDIT produces a flat-rated price, while the study for UDIT produces a distance-sensitive price. The distance-sensitive pricing for UDIT reflects the fact that this product relies on distance-sensitive components.

3. Shared Transport

Z-Tel urges the Commission to adopt a shared transport rate in the range of \$0.00014 to \$0.00056 per minute. *See* Z-Tel Br. at 9 n.10. This range is the result of an analysis conducted by Dr. Ford, in which he compared Qwest's proposed rate to the FCC's Synthesis Model estimate for common transport. *Ex. Z-Tel-1 (Ford Dir.)* at 23, Table 5. When questioned about his analysis at the hearing, however, Dr. Ford was unable to identify the various components included in the rates that he compared. *See* Tr. at 1793-1800 (Ford Cross).

In fact, Qwest's shared transport includes a weighted average of: (1) end office to end office direct trunks; (2) end office to access tandem (and access tandem to end office) trunks; and (3) end office to local tandem (and local tandem to end office) trunks. Qwest's study separately calculates the per minute of use costs for each of these types of calls. The study weights these calls together based on Qwest trunk usage data, resulting in a single shared transport cost that is calculated on a per minute of use basis. *Ex. Qwest-16 (Million Dir.)* at 44.

By contrast, the HCPM estimate for common transport includes only: (1) end office to local tandem (and local tandem to end office) trunks; and (2) end office to access tandem (and access tandem to end office) trunks. Thus, the HCPM estimate for common transport does not

include the same facilities as Qwest's shared transport, which renders Dr. Ford's comparison inappropriate.

4. Combinations of Unbundled Network Elements

Qwest's proposed recurring rates for UNE combinations are based upon the sum of the recurring rates for the underlying network elements. No party has objected to this approach, and AT&T and XO have expressly stated their agreement with it. AT&T/XO Br. at 29.

III. The Recurring Rate for the Unbundled Loop

A. Qwest's LoopMod uses a Forward-Looking Network Design and Forward-Looking Costs to Calculate the Costs of the Unbundled Loop.

1. LoopMod uses a Forward-Looking Network Design.

The LoopMod portion of ICM calculates the cost of the unbundled loop using the forward-looking network architectures for feeder and distribution that Qwest is currently using in its networks today. Qwest Br. at 23-28. In both the feeder and distribution networks, the model relies on Arizona-specific information relating to population density, vendor prices, placement costs, and the design of outside plant. *Id.*

AT&T and XO assert incorrectly that LoopMod's distribution network is based on a "one-size-fits all design" that results in little variation from one state to another. AT&T/XO Br. at 8-10. This assertion ignores the fact that LoopMod uses data relating to the density characteristics of actual Arizona distribution areas ("DAs") to develop state-specific distribution investment. The design of LoopMod's distribution network begins with standard distribution designs that account for the effect of natural and man-made obstacles in building the network and calculating investment.¹² LoopMod then applies a multiplier based on the individual DA densities to adjust

¹² These real-world considerations are missed in a purely mathematical approach to branch and backbone cable distance, such as the approach that the HAI model uses.

the cable lengths in the standard design, resulting in cable lengths specific to Arizona DAs. Ex. Qwest-2 (Buckley Reb.) at 24.

AT&T and XO suggest that this method of designing a distribution network is not a least-cost approach, but they offer no evidence to support that suggestion. The use of actual data from Arizona DAs, current Arizona vendor prices and placement costs, and forward-looking architectures is consistent with TELRIC and a least-cost approach to modeling the network.

2. There are substantial differences between LoopMod and U S WEST's RLCAP model.

AT&T and XO represent that LoopMod is another version of the U S WEST Regional Loop Cost Analysis model ("RLCAP") that U S WEST presented in the first wholesale cost docket hearing in 1997. AT&T/XO Br. at 7. They represent that the Commission rejected RLCAP in the first cost docket and argue, therefore, that the Commission should reject LoopMod in this proceeding. *Id.* Both representations are incorrect.

In Decision No. 60635, the Commission did not adopt either the Hatfield model or RLCAP but, instead, decided to use parts of both models to derive the loop rate: "We are not adopting either the Hatfield Model or U S WEST's cost study models as presented by the parties in its entirety."¹³ The Commission calculated the loop rate using some assumptions taken from RLCAP or that were consistent with RLCAP, including inputs and assumptions relating to depreciation lives, design of the distribution network, and the use of three lines per living unit.¹⁴ While the Commission did express its belief that U S WEST's RLCAP relied on embedded costs

¹³ *In the Matter of Consolidated Petitions for Arbitration with U S WEST Communications Co Pursuant to the Telecommunications Act of 1996*, Docket Nos. U-3021-96-448, et. al., Decision No. 60635 at 6 (Ariz. Corp. Commission Jan. 30, 1998) ("Decision No. 60635").

¹⁴ Decision 60635 at 10, 15, 17.

and technology, that belief related to a model that was presented almost five years ago and was substantially different from Qwest's current version of LoopMod.

There are many material differences between RLCAP and LoopMod that render any criticisms of RLCAP from Decision No. 60635 irrelevant to an analysis of LoopMod. Some of these differences are:

- A new design of the feeder network in which each route in each Arizona wire center is analyzed to determine the amount of demand and the distance from the wire center where the demand occurs;
- A different method of weighting within the distribution network that reflects the unique density that exists within each distribution area in Arizona;
- Disaggregation of placement costs by density group and by feeder-urban versus feeder-rural, which reflects the effect of density on the placement methods that an engineer would choose; and
- A reduction in the amount of directional boring that the model assumes.

Ex. Qwest-1 (Buckley Dir.) at 5, 8, 13; Tr. at 77-78, 131-33 (Buckley Cross).

AT&T and XO also assert incorrectly that LoopMod does not "consider the particular demographics and geology" of Arizona. AT&T/XO Br. at 7. As the summary set forth above shows, LoopMod specifically accounts for Arizona-specific demographics by using weightings in the distribution network based upon the unique density that exists within each distribution area in Arizona. LoopMod's analysis of each route in each Arizona wire center for the design of the feeder network also directly reflects Arizona demographics.

In addition, LoopMod allows the user to select different methods for placing outside plant. For example, in a rural area in which density is low and the soil is relatively soft, the user can select the method of direct plowing for placing cable. Ex. Qwest-1 (Buckley Dir.) at 19.¹⁵

B. Qwest's LoopMod uses Appropriate Forward-Looking Inputs for Calculating the Recurring Costs of the Unbundled Loop.

Staff, AT&T, and XO challenge several of the LoopMod inputs, claiming that Qwest is relying on assumptions relating to an "embedded network." Staff Br at 7; AT&T/XO Br. at 10-11. Their assertions are inaccurate. LoopMod relies not on so-called "embedded inputs," but on forward-looking assumptions that reflect how networks are designed and operated in the real world. Unlike the assumptions in the HAI model, the network-related assumptions that LoopMod incorporates are supported by testimony from engineers responsible for designing, operating, and maintaining the network in Arizona. Staff and the Joint Intervenor apply the term "forward-looking" to inputs and assumptions that are unrealistic and unattainable in a real-world network. The Commission should reject their proposals and adopt the forward-looking, but realistic, inputs that LoopMod uses.

1. Structure Sharing

Opportunities for a telephone company to share the costs of placing facilities with other utility companies occur primarily in new developments where developers provide a common trench and through sharing of poles that are used for aerial structure. Qwest Br. at 33-35. Qwest's actual experience with cost sharing in Arizona and other states supports the assumptions

¹⁵ In its brief, Staff asserts that Qwest's cost witness, Theresa Million, acknowledged during cross-examination that LoopMod "is essentially the same model that the Commission rejected in Decision 60635." Staff's Post-Hearing Brief ("Staff Br.") at 6. This representation mischaracterizes Ms. Million's testimony. When asked whether ICM follows the same "methodological approach" as RLCAP, Ms. Million stated only that RLCAP and ICM were based on the same premise -- "which is that you build a forward-looking network based on what you expect to incur serving the CLECs." Tr. at 770 (Million Cross). Her statement is hardly an acknowledgement that LoopMod and RLCAP are the same model.

that Qwest will pay 50 percent of the costs of placing aerial cable, 80 percent of the placement costs for buried cable, and 95 percent of the costs of placing underground cable. *Id.*

Citing the portion of the FCC's Tenth Report and Order on Universal Service¹⁶ relating to cost sharing, AT&T argues that Qwest has understated the amount of sharing that the telephone company will experience. AT&T Br. at 16-17. However, AT&T does not reveal that the very order it cites establishes substantially less cost sharing than the HAI model includes. The HAI model assumes that the telephone company will pay only about 35 percent of the costs of placing aerial, buried, and underground facilities. Ex. Qwest-29 (Fitzsimmons Reb.) at 42. By contrast, the *Inputs Order* assigns to the telephone company 100 percent of the costs of buried and underground facilities in the lowest density zones, between 65 and 85 percent of these costs in the middle density zones, and 55 percent of these costs in the highest density zones.¹⁷ For aerial plant, the *Inputs Order* assigns 50 percent of the costs to the telephone company in the low and middle density zones and 35 percent of these costs in the highest density zones.¹⁸ These sharing percentages are far more in line with the percentages in LoopMod than they are with the sharing assumptions in the HAI model. Moreover, the FCC's percentages assign significantly more cost to a telephone company than this Commission did with its assumption of 50 percent sharing in Decision No. 60635.

Staff challenges Qwest's cost sharing percentages, asserting in particular that Qwest's assumption that the telephone company will pay 80 percent of the costs of buried plant is overstated. Staff Br. at 10. Staff bases its challenge on the assertion that in "standard residential

¹⁶ Tenth Report and Order, *In the Matter of Federal-State Joint Board on Universal Service; Forward-Looking Mechanism for High Cost Support for Non-Rural LECs*, CC Docket Nos. 96-45 & 97-160, FCC 99-304 (rel. Nov. 2, 1999) at ¶ 243 ("*Inputs Order*").

¹⁷ *Inputs Order* ¶ 243.

¹⁸ *Id.*

subdivisions," developers typically provide a common trench "at no cost to Qwest." *Id.* The flaw in this argument is that most of the residential subdivisions in Arizona already exist and are not in the process of being developed. In existing subdivisions, there are no developer-provided trenches that allow Qwest to avoid the costs of placing facilities. Moreover, Staff's criticism of this sharing assumption fails to recognize that LoopMod specifically does account for the cost savings that the telephone company realizes from developer-provided trenches. Ex. Qwest-1 (Buckley Dir.) at 26.

Staff also asserts without explanation that Qwest's proposed sharing percentages are based on "historical or embedded cost data." Staff Br. at 10. This criticism reflects confusion between the use of embedded costs, which the FCC's pricing rules prohibit, and reliance on real-world experience, which is essential to developing realistic, forward-looking costs. Qwest is the only party in this proceeding that has presented evidence about the extent to which cost sharing among utilities has actually occurred in Arizona and other states. *See* Qwest Br. at 34, 51. This evidence is not "embedded cost data," as Staff suggests; instead, it is proof of the amount of cost sharing that realistically can be expected to occur on a forward-looking basis. The real-world experience of Qwest and other carriers confirms that LoopMod's forward-looking assumptions relating to cost sharing are realistic.

2. Placement Costs

Staff and the Joint Intervenors argue that the different percentages of placement activities to include in the loop models should be based on the premise that a telephone company almost always will have the ability to place its facilities before streets, highways, buildings, and other infrastructure are in place. Staff Br. at 10-12; AT&T/XO Br. at 11-12. Based on this premise, they contend that LoopMod is flawed because it assumes that a telephone company will have to use placement methods that take existing infrastructures into account. As Staff and Joint Intervenors would have it, the replacement network upon which TELRIC is based would be built

in a green field environment with few, if any, natural or man-made obstacles to interfere with construction.

The *First Report and Order* establishes that this approach to TELRIC is improper. In that order, the FCC emphasized the importance of having prices that simulate conditions in a competitive market:

Because a pricing methodology based on forward-looking costs *simulates* conditions in a competitive marketplace, it allows the requesting carrier to produce efficiently and to compete effectively, which should drive retail prices to their competitive levels.¹⁹

In a competitive market, if a carrier decides today to build its own facilities, it must install the facilities by navigating under and around many types of obstacles, including streets, highways, sidewalks, buildings, and yards. If a cost model pretends that a carrier can build a network without using the placement techniques that these obstacles require, it will *not* produce costs that simulate conditions in a competitive environment.

Staff's and the Joint Intervenor's contention that a cost model should make little or no use of directional boring and placement methods that involve cutting and restoring asphalt and concrete is tantamount to advocating pricing that is not competitive. Under their approach, CLECs would have reduced incentive to build their own facilities, since they would be able to lease facilities at prices that do not include realistic placement costs.

The FCC's *Inputs Order* also demonstrates the inaccuracy of Staff's and the Joint Intervenor's position on this issue. The inputs that the FCC established for placement costs are based on cost data relating to the placement of facilities in both growth areas and in areas that are already developed.²⁰ In addition, the FCC recognizes that placement costs increase as population density increases: "[W]e note that the evidence supplied on the record in this proceeding

¹⁹ *First Report and Order* at ¶ 679.

²⁰ See, e.g., *Inputs Order* ¶¶ 113, 116, 118.

demonstrates that structure costs increase as population density increases."²¹ This relationship reflects the fact that as density increases, a telephone company must use the placement methods that are needed to install facilities around and under man-made obstacles.

3. Fill Factors

AT&T's and XO's criticisms of the distribution fill factors that LoopMod uses also are inaccurate. As Qwest described in its post-hearing brief, LoopMod does not have a separate, identifiable fill factor for distribution design. Instead, the model assumes that a living unit has two or three pairs, depending on the density group in which the living unit is located. The model selects distribution cable sizes that correspond with the number of pairs in a living unit. Qwest Br. at 36-37. In Decision No. 60635, the Commission expressly found that it was appropriate for Qwest to assume three pairs per location, as LoopMod does in certain density zones, since "[t]he cost of providing a third line initially is much less than adding one later."²²

AT&T and XO assert incorrectly that in the *Inputs Order*, the FCC rejected a "pairs per location" approach to fill factors. AT&T Br. at 14. A fair reading of the relevant paragraphs of the *Inputs Order* demonstrates that AT&T and XO have mischaracterized the order. In those paragraphs, the FCC responds to an assertion from GTE that the use of standard fill factors in the FCC's Synthesis Model produces anomalous results and that, therefore, the model should use a pairs per location approach to fill. The FCC rejected this criticism of its model, stating that the anomaly that GTE identified did not exist. As a result, the FCC stated, "there is no need to modify the model to accept pairs per location rather than fill factors, as GTE contends."²³ As this

²¹ *Inputs Order* ¶ 119.

²² Decision 60635 at 17.

²³ *Inputs Order* ¶ 197.

statement shows, the FCC did not conclude that a pairs per location approach to fill is inappropriate; instead, it found only that the Synthesis Model did not require that approach.

AT&T and XO also err in suggesting that the fill rates in cost model should allow for little, if any, growth. In the *First Report and Order*, the FCC established that fill factors should include "projections" of the total usage of an element:

Per-unit costs shall be derived from total costs using reasonably accurate "fill factors" (estimates of the proportion of a facility that will be 'filled' with network usage); that is, the per-unit costs associated with a particular element must be derived by dividing the total cost associated with the element by a reasonable projection of the actual total usage of the element.²⁴

Consistent with this directive, Qwest's cost studies generally use projected actual fill factors. Ex. Qwest-16 (Million Dir.) at 30. LoopMod's approach of installing two or three cable pairs per living unit also is designed to reflect reasonable projections of the actual total usage of unbundled loops. A two- or three-pair design allows Qwest to respond to demand for additional pairs, regardless where the demand exists in a neighborhood, with little additional investment and without the disruption to a customer's premise that comes with reinforcing facilities. Qwest Br. at 37.

4. Plant Mix

No party rebutted Qwest's evidence that the use of aerial plant is on the decline in the telecommunications industry. Qwest Br. at 57-59. While AT&T and XO acknowledge in their brief that less than 20 percent of Qwest's plant in Arizona is aerial (AT&T/XO Br. at 15), the HAI Model nevertheless assumes that almost 30 percent of all plant is aerial. Qwest Br. at 57-59.²⁵ In other words, the model assumes that on a forward-looking basis, the use of aerial plant

²⁴ *First Report and Order* ¶ 682.

²⁵ In the hearing, Joint Intervenor witness, Douglas Denney, stated that Qwest's ARMIS Reports indicate that a higher percentage of aerial plant is in place in Arizona than Qwest

in Arizona will increase substantially. There is no evidence that supports the assumption, and, indeed, all the evidence relevant to this issue demonstrates that the percentage of aerial plant in Arizona is likely to decline. LoopMod's assumption that 14 percent of plant will be aerial is consistent with Qwest's experience and with all reasonable forward-looking assumptions about the use of this type of plant.

The FCC's *Inputs Order* confirms that the HAI model overstates the percentage of aerial plant in the telephone network. The order rejects the model's default assumptions relating to this type of plant and specifically criticizes the model for using "very little underground distribution plant and none in the six lowest density zones."²⁶

5. Drop Lengths

AT&T and XO criticize aspects of Qwest's seven-state survey of drop lengths but remain conspicuously silent about their evidence relating to drop lengths. Their silence reflects the fact that the Joint Intervenors have no evidence relating to drop lengths that is specific to Qwest's region. They offer only an 18-year-old survey that Telcordia conducted, acknowledging that they do not know how the survey was conducted or whether it includes any observations from Arizona or other states in Qwest's region. Nor do they attempt to explain why the HAI model uses an average drop length that is less than the average reported in the Telcordia study. Qwest Br. at 56.

Against this silence concerning their own evidence, AT&T and XO criticize Qwest's drop survey on the ground that the field engineers who performed the survey did not actually "measure" drop lengths, but, instead, walked off the lengths or visually estimated them.

reported in its testimony. As Qwest demonstrated in its opening brief, with proper adjustments, the percentage of aerial facilities is substantially less than the percentage that Mr. Denney reported. Qwest Br. at 36 n.18. In addition, in the *Inputs Order*, the FCC rejected the use of ARMIS data for establishing plant mix, stating that "because companies do not report aerial and buried route miles in ARMIS . . . it is not possible to develop plant mix factors directly from these data at this time." *Inputs Order* ¶ 233.

²⁶ *Inputs Order* ¶¶ 237, 238.

AT&T/XO Br. at 17. The fact that Qwest's engineers may not have used tape measures to calculate drop distances does not detract from the usefulness of the survey. Based on hundreds of observations per state, the survey produces an average drop length of 150 feet. Even if one were to assume that not all of the measurements were precise, an average in the range of 150 feet still demonstrates that the HAI model's average length of 66 feet is grossly understated. Likewise, if multi-tenant dwellings had been included in the survey, as AT&T and XO claim they should have been, the average still would have been substantially in excess of 100 feet. The fact remains that Qwest's survey is the only Qwest-specific evidence of average drop lengths, and that survey shows the inaccuracy of the HAI model's default input for drop lengths.

AT&T and XO also assert without full disclosure that LoopMod assumes drop lengths ranging from 70 feet to 300 feet. *Id.* They don't reveal that on the same page they cite for these figures, also states that the average drop length in the model is between 110 to 120 feet. Ex. Qwest-1 (Buckley Dir.), Ex. RJB-3 at 3. In other words, LoopMod is assuming an average drop length that is 30 to 40 feet less than the average length that Qwest's survey produced. This fact demonstrates the reasonable and conservative nature of this input into LoopMod.

6. IDLC Unbundling Costs

Qwest incurs costs to separate individual unbundled loops from integrated digital loop carrier systems ("IDLC"). When a CLEC orders an unbundled loop that is carried on IDLC, Qwest must groom or unbundle the loop to permit it to be terminated on an intermediate distribution frame and cross-connected to a CLEC's equipment. To recover these costs, Qwest is proposing a stand-alone charge of \$1.59 per loop for 2-wire unbundled loops. Qwest Br. at 38.

AT&T and XO do not contest that Qwest incurs unbundling costs. Nevertheless, they argue that Qwest should be denied recovery of these costs because it would be "efficient" on a "forward-looking basis" to assume that CLECs will purchase loops in a fully integrated DLC system ("IDLC") and thereby eliminate the need for unbundling. AT&T/XO Br. at 18. This argument is another example of the Joint Intervenors offering an unrealistic assumption that

would permit them to avoid paying costs that they are causing. The reality is that CLECs often are not purchasing loops in fully integrated DLC systems and that Qwest, therefore, is incurring unbundling costs. Qwest is entitled to recover these costs. *See* Ex. Qwest-2 (Buckley Reb.) at 18-19.

AT&T and XO also assert that LoopMod assumes the presence of more IDLC than Qwest actually has in its network and, therefore, overstates the amount of unbundling that will be required. AT&T/XO Br. at 18. The logical corollary to this argument is that LoopMod should assume only the amount of IDLC that is in Qwest's existing network, which is directly contrary to the modeling requirement of using a forward-looking network. Indeed, if LoopMod used the amount of IDLC that is in Qwest's existing network, the CLECs would no doubt argue that that assumption is not forward-looking. The CLECs cannot have it both ways. LoopMod's use of the forward-looking assumption of a substantial amount of IDLC in the network increases the amount of loop unbundling that is required. At the same time, this assumption reduces other costs, including the costs associated with central office terminal equipment. In particular, the use of IDLC eliminates the costs associated with the demultiplexing equipment that is needed for universal DLC systems. It is patently inconsistent for the CLECs to argue that the Commission should recognize only the decreases in costs that result from this assumption and not the increases.

C. Staff's Analysis of the Rate for the Unbundled Loop is Flawed.

In an attempt to support the rates it has proposed for the unbundled loop, Staff relies upon a run of HAI model 5.2a performed by its witness, William Dunkel. Mr. Dunkel reported that, based on a run of the HAI model with the inputs that the FCC used to determine universal service funding for Arizona, he obtained a statewide average loop rate of \$11.89 with sold exchanges removed and \$13.21 with sold exchanges included. According to Mr. Dunkel, the inputs to the HAI model that he used are the same as the inputs that the FCC used to determine universal service funding for Arizona. Ex. Staff-31 (Dunkel Surreb.) at 1. Mr. Dunkel, however,

is incorrect; he did not use the input values specified by the FCC. He mistakenly selected a different set of inputs. His model run, therefore, is not based on the FCC's input values, and the results of his model run do not provide meaningful information for consideration in this proceeding.

Mr. Dunkel claims that the file that he downloaded from the FCC's website and used in his run of the HAI model contains the input values that the FCC used to determine universal service funding in Arizona. This is incorrect. This fact was verified by Dr. Fitzsimmons' review of the documentation of the FCC's universal service cost model (Synthesis or HCPM Model) and by contacting the Staff at the FCC. A review of the FCC's model documentation demonstrates that the FCC's input values for distribution and feeder investment are not in the FCC worksheet that Mr. Dunkel used for his run of the HAI model. In October 1999, the FCC adopted input values for the HCPM Model and described these values in the *Inputs Order*. These FCC-specified values are located in the file "HCPM_inputs_October 1999.xls." This file is downloaded automatically when a user downloads the FCC's model. A copy of this file is attached to the surrebuttal testimony of Qwest witness, Dr. William Fitzsimmons, as Exhibit WLF-5. See Ex. Qwest-36, Ex. WLF-5. The inputs described in this file match the inputs specified by the FCC in the *Inputs Order*. They are not the values for feeder and distribution investments that Mr. Dunkel used in his run of the HAI 5.2a model. Ex. Qwest-36 (Fitzsimmons Surreb.) at 4-5.

When the FCC's model is run, the HCPM input values from the file "HCPM_inputs_October 1999.xls" are written to a file called "Hcpm_current_inputs.xls." This new file contains the values for the HCPM inputs that are actually used when the model is run. When the HCPM is run with the "HCPM_inputs_October 1999.xls" file, the values for feeder and investment inputs match the values from the *Inputs Order*, as set forth in Exhibit WLF-3 of Dr. Fitzsimmons' rebuttal testimony. *Id.* at 5. In the "FCC" column of Exhibit WLF-3 attached to his rebuttal testimony, Dr. Fitzsimmons lists some of the FCC's values that were

misrepresented by Mr. Dunkel, and this exhibit lists several additional input categories that are also incorrect in Mr. Dunkel's run of the HAI model. As described in the hearing, Dr. Fitzsimmons did not include values for these additional inputs in WLF-3, because the values for these input categories do not translate directly from one model to the other. Tr. at 1874-77 (Fitzsimmons Redir.).

In conversations that Dr. Fitzsimmons and his staff had with the FCC, members of the FCC staff confirmed that the inputs in the worksheet that Mr. Dunkel relied upon are the default inputs for HAI model 5.0, not the FCC's inputs to the HCPM. Ex. Qwest-36 (Fitzsimmons Surreb.) at 5. When Dr. Fitzsimmons ran the FCC's model with the FCC's inputs, he obtained a loop cost estimate of \$17.77. *Id.* at 7.

In its post-hearing brief, Staff attempts to minimize the significance of Mr. Dunkel's error, asserting that when Mr. Dunkel used the FCC's values for inputs specified in WLF-3, the impact on his estimated loop costs was only \$0.12. Staff Br. at 13. What is not recognized or stated by Mr. Dunkel and Staff, however, is that this run of the HAI model continues to include many unsupported input values. Mr. Dunkel inserted only the FCC's input values that are listed in WLF-3. This includes values for distribution cable fills, SAI investments, fiber feeder investments, and two switching investments. As Dr. Fitzsimmons describes in WLF-3 and explained in the hearing, the values listed in WLF-3 are but a small subset of the FCC input values that are misrepresented in Mr. Dunkel's run of the HAI model. There are many other FCC input values that do not match the inputs used by Mr. Dunkel. In his run of the HAI model, for example, he did not include values from the *Inputs Order* relating to distribution plant mix, feeder plant mix, copper feeder fills, copper feeder cable costs, manholes, pole investment and labor, conduit investment, and DLC investment. Tr. at 1874-77 (Fitzsimmons Redir.). For these important model inputs, Mr. Dunkel used values from HAI model 5.0, and these values are not supported by any party to this proceeding. It is not a simple task to translate these important values specified by the FCC for use in its Synthesis Model into values that fit into the structure

of the HAI model, and it is unknown what the impact would be from accomplishing this task. What is clear is that Mr. Dunkel did not provide a run of the HAI model based on the FCC's input values.

In sum, Staff is simply incorrect in claiming that Mr. Dunkel used the same inputs that the FCC used in determining universal service support for Arizona. Staff could have confirmed this fact, as Dr. Fitzsimmons and his staff did, by simply calling the FCC. Instead, Mr. Dunkel used inputs from HAI model 5.0, which no party is supporting, and Staff continues to stand by those improper inputs. Mr. Dunkel's model results are not what he portrays them to be, and the Commission should not rely on Mr. Dunkel's estimates of loop costs or his proposed rates for loops.

D. The Commission Should Adopt Qwest's Deaveraging Proposal.

Qwest has proposed to deaverage the loop rate by calculating loop costs at the wire center level and assigning wire centers to deaveraged zones using an optimization program that AT&T advocated in Washington and Minnesota. This methodology is consistent with the approach that AT&T and other CLECs have advocated and should be adopted. Qwest Br. at 69.

AT&T/XO and Staff take issue with Qwest's decision to group the two lowest cost wire centers (Phoenix Main and Tempe) into Zone 1. AT&T/XO Br. at 19; Staff Br. at 15-16. As Ms. Million explained, this approach is based on the approach to deaveraging that the Washington Commission followed and that AT&T endorsed in its testimony as being reasonable. Tr. at 760-61 (Million Cross). Qwest's proposed method for deaveraging results in about 69 percent of lines being in the two lowest zones, with 5.6 percent in zone 1 and 63.1 percent in zone 2. Ex. Qwest-18 (Million Reb.) at 59.

IV. Nonrecurring Costs and Rates

A. Qwest's Enhanced Nonrecurring Cost Model Produces Reasonable, Forward-Looking Nonrecurring Rates.

Qwest's Enhanced Nonrecurring Cost Studies ("ENRC") use input from subject matter experts ("SMEs") concerning the types of tasks and activities that are necessary to establish a service or to provide a UNE. *See* Qwest Br. at 70.²⁷

The Joint Intervenor asserts three general criticisms of Qwest's nonrecurring cost studies. First, they argue that Qwest's wholesale nonrecurring charges should be limited by law to the nonrecurring charges that Qwest's retail customers pay, less application of an avoided cost discount. AT&T/XO Br. at 29. Second, they assert that the work times and probabilities in the ENRC are not supported by any evidence. *Id.* at 30-31. Third, the Joint Intervenor contends that Qwest's proposed nonrecurring charges do not assume the use of forward-looking operational support systems ("OSS") and equipment and, therefore include excessive manual activity. These criticisms are baseless. Two courts have ruled that retail caps on wholesale rates are unlawful; the data the SMEs have provided reflect the work times and the activities that Qwest must perform; and Qwest's proposed nonrecurring charges include aggressive assumptions about OSS mechanization and terminal mechanization.

1. Qwest's Retail Nonrecurring Charges do not Establish a Ceiling for Wholesale Nonrecurring Charges.

AT&T recognizes that both the Act and the FCC's rules require nonrecurring charges to be developed using the same TELRIC principles used in developing recurring rates. *See* AT&T/XO Br. at 29; 47 U.S.C. § 252(d)(1); 47 C.F.R. § 51.507(e). But then AT&T suggests that this Commission set nonrecurring charges based on what Qwest recovers from its own retail

²⁷ In its post-hearing brief, Qwest addresses in detail the significant shortcomings in the nonrecurring cost model that the Joint Intervenor has presented. Qwest Br. at 76-80. That discussion demonstrates that the NRCM is unreliable and should be rejected by the Commission.

customers, less the appropriate avoided cost discount. This suggestion, which rests on a mischaracterization of Decision No. 60635 and a misunderstanding of the relationship between Qwest's wholesale and retail services, has been flatly rejected by the United States District Courts for both the District of Arizona and the District of Colorado.

In its *First Cost Docket Order*, only as an interim measure did this Commission approve tariffed charges for nonrecurring charges, less an avoided cost discount. *First Cost Docket Order* at 28-29. On judicial review, the federal court for Arizona reversed and remanded this decision. It held:

The ACC fixed the price for non-recurring charges ("NRCs") at the current retail tariff price less an 18 percent wholesale discount. US West and AT&T both object.

The "retail price less avoided costs" formula applies only when a CLEC purchases finished services for resale. It is not clear from this record whether NRCs are properly classified as a "resale" product, particularly when those costs are incurred in connection with a CLEC's purchase of unbundled loops. A resale service is a telecommunications service that US West ordinarily provides at retail to subscribers who are not telecommunications carriers. The term "network element" is defined in 47 U.S.C. § 153(29). If NRCs are an unbundled network element, rather than a resale service, then the ACC must price NRCs on the basis of forward-looking costs without regard to the retail price. Rather than speculate whether NRCs should be categorized as an unbundled element or a resale service, the court remands this issue to the ACC for reconsideration and to articulate a more detailed explanation for the agency's decision.²⁸

The federal district court in Colorado reached precisely the same conclusion. On judicial review of an order from the Colorado Commission, the court noted, "As to USWC's challenge, neither MCI, AT&T nor USWC disputes that the Commission erred by setting nonrecurring

²⁸ *U S WEST Communications v. Jennings*, 46 F. Supp. 2d 1004, 1013 (D. Ariz. 1999) (citations omitted).

costs for loop provisioning based upon USWC's retail rates."²⁹ Accordingly, the court granted U S WEST's claim for relief and remanded the issues to the Colorado Commission "to determine nonrecurring costs for provisioning unbundled loops in a manner consistent with the Telco Act."³⁰

As U S WEST and Qwest have pointed out to both commissions and federal courts, its costs associated with provisioning unbundled loops is higher than those associated with providing retail business service. As the FCC has expressly recognized, "the provisioning of unbundled local loops has no retail analogue"³¹

Accordingly, this Commission must set Qwest's nonrecurring charges based solely on Qwest's TELRIC costs, without regard to any supposed retail analogues.

2. Qwest has Presented Evidence Supporting the Work Times and Probabilities in the ENRC.

The thrust of the Joint Intervenors' criticism relating to subject matter experts is that Qwest relied on their opinions without providing any back-up documentation. However, Qwest did present documentation that identifies and supports the times and probabilities used in its nonrecurring cost studies. See Ex. Qwest-18 (Million Reb.), Ex. TKM-3R. This documentation reflects input from many experts and provides the assumptions that underlie the studies. The work papers include memoranda from some of these experts. Significantly, while the CLECs challenged some of the work times described in this back-up and used in Qwest's studies, in

²⁹ *U S WEST Communications, Inc. v. Hix*, Civil Action No. 97-D-152 (D. Colo. June 23, 2000) at 8-9.

³⁰ *Id.* at 9.

³¹ *Application of BellSouth Corp. et al. for Provision of In-Region, InterLATA Services in Louisiana*, Memorandum Opinion and Order, CC Docket No. 98-121, FCC 98-271 (rel. Oct. 13, 1998) at ¶ 198.

many cases, they did not challenge Qwest's assumptions. The absence of challenges to many of Qwest's assumptions is, in itself, a form of validation.

3. Qwest's ENRC Relies on Forward-Looking Assumptions Relating to OSS.

AT&T's assertions that Qwest has not assumed enough forward-looking OSS in its NRCs ignore the recent changes to the Qwest model. The ENRC now includes assumptions about the forward-looking nature of the OSS. For all UNE-P products, Qwest assumes a flow-through rate of 85% which Qwest intends to implement in the near future. For most other loop products, Qwest assumes a flow-through of 60% or more. All these assumptions are based on planned increases in the flow-through of Qwest's OSS. Ex. Qwest-18 (Million Reb.), TKM-03R at 71-77, 498-530.

For the more complex loops, such as Ds-1s and 3s, there is necessarily more fall-out and more manual processes. As pointed out in Qwest's post-hearing brief, these loops are harder to mechanize, are not mechanized on the retail side, and require both testing and installation of terminal equipment, which increases the amount of manual activity. Even the AT&T NRC model support manual anticipates manual activity for the installation of high capacity loops.³²

In summary, AT&T and XO claim that the ENRC lacks mechanization despite documentation from the model that disproves their claim. Their claim that for POTS loops, there can be 98% flow-through and no manual installation activity is pure fantasy without evidentiary support. It is revealing that Mr. Weiss could not refer to any actually installed OSSs that perform at this level of mechanization. Tr. at 1506-13 (Weiss Cross).

AT&T and XO contend further that Qwest's rate for installing unbundled loops is inflated because it assumes some manual processing. According to AT&T and XO, as depicted in the Joint Intervenor's nonrecurring cost model, unbundled loops can often be provisioned using a

³² See NRCM documentation at 125, 143.

form of IDLC known as GR-303, which provides for mechanized customer connections. However, even with GR-303, Qwest technicians still must travel to some customers' premises. GR-303 can provide some mechanized central office connections, but there is still a need for some travel time and field installation work for cross-connects at feeder distribution interfaces and customer premises. Contrary to AT&T's and XO's claims about dedicated outside plant, the reality is that most plant is disconnected and sometimes immediately re-used. Accordingly, except for UNE-P conversions, a field trip by a technician usually is required.

B. There is a legitimate need for some individual cost basis ("ICB") pricing.

WorldCom criticizes Qwest for its use of Individual Cost Basis ("ICB") pricing. WorldCom Post-Hearing Brief ("WorldCom Br.") at 18-19. However, Qwest has proposed ICB pricing only where there is no historical data available from which to develop standard costs and prices. *See* Ex. Qwest-7 (Kennedy Reb.) at 20. In short, it is inevitable that certain elements be ICB priced on an interim basis.

For example, WorldCom argues that ICB pricing for adjacent collocation should be disallowed. *See* WorldCom Br. at 18-19. Qwest, however, has no history of providing this product to competitors and, consequently, no data to rely upon in developing prices. *See* Tr. at 302 (Hubbard Cross). If and when Qwest has handled enough requests for adjacent collocation to gather the data necessary to develop standard costs and product offerings, it will do so. *See* Ex. Qwest-7 (Kennedy Reb.) at 21. In the meantime, adjacent collocation must be priced on an ICB basis. This does not mean that pricing for adjacent collocation is not cost-based. Rather, upon receiving a request for adjacent collocation, Qwest obtains cost information from appropriate subcontractors and vendors. *See* Tr. at 305 (Hubbard Cross). This cost information is then communicated to the requesting CLEC.³³ *See id.* at 306.

³³ If the CLEC wishes to dispute the costs presented, it can do so, employing the dispute resolution clause in its contract. *See id.*

V. Sub-Loop and Access to Wire in Multi-Tenant Environments

The unbundled distribution loop runs from a Qwest serving area interface ("SAI") to a network interface device ("NID") or other point of demarcation at the customer location. The point of demarcation is where the Qwest-owned facilities end and the customer-owned facilities begin. This element consists of: 1) a connection point at the serving area interface (SAI) or feeder distribution interface (FDI); 2) the wires between the FDI and the customer NID or building terminal; 3) the simple or complex NID or building terminal at the customer residence; and 4) any Qwest-owned intra-building cable that may exist in a customer's building. Qwest proposes to deaverage this element consistent with the method the Commission adopts to deaverage the unbundled loop. Ex. Qwest-2 (Buckley Reb.) at 28-29.

Cox claims incorrectly that the distribution plant excludes cable on private property. The reality is that the LoopMod Density Group 2 (DG2) design contains underground cabling placed in building owner provided duct. This cabling provides the connectivity between the SAI and the building terminals at each building in a multi-building/multi-tenant environment. *Id.* at 29

A. The Commission Should not Further Deaverage the Loop to Break out Costs Specific to Campus Wire.

The costs for campus wire should not be treated as though they were different from any other loops, and priced separately. In practice, most campus arrangements are fed directly from a terminal that is also the FDI. Thus, campus wire or inter-building cable in MDUs is just one more form of subloop distribution plant. See Ex. Qwest-8 (Fleming Reb.) at 101-102.

Even where a separate terminal serves an MDU, the configuration for both types of distribution arrangements are similar. It would be unreasonable to design a rate structure that has different prices for two similarly configured distribution arrangements simply because the terminal serving one of the areas is the FDI. The HAI cost model and Qwest's ICM assume that a forward looking network includes one "box" in both MDU and non-MDU architectures, making the campus wire subloop and the distribution subloop one and the same. All three

produce a distribution subloop that blends MDU and non-MDU architectures. *Id.* at 103-104; Tr. at 495-498 (Fleming Cross).

Campus wire should also not be priced as a separate element because of the effect of such a decision on the price of non-MDU loops. Breaking out campus wire will cause all the other subloops to rise more than 40%. Pricing the campus wire subloop lower than the distribution subloop will thereby decrease competition for all customers not located in an MDU, including single family dwellings. Separating campus wire from the distribution subloop has no technical justification because both run from the SAI to the Customer premises. In addition, separating out campus wire will lead to excessive deaveraging which will raise prices in other areas above the level that stimulates competition. The resulting single-family residential wholesale prices will prevent competition with Qwest residential retail prices.

If the Commission nevertheless determines that it will break out campus wire and price it separately from other loops, then it should adjust the cost of other loops to reflect the effect of this deaveraging. *See* Fleming Reb. at 103.

B. The Commission Should not Order Relocation of Demarcation Points to the MPOE and Should not set any Prices for Relocations Requested by MTE Owners.

Cox claims that the Commission should effectively force all MTE owners to purchase their campus wire to promote competition.³⁴ The FCC has determined, however, that a global mandate that all demarcation points move to the MPOE would be ill-advised. Such a requirement would disadvantage users of unbundled loops and the UNE platform.³⁵ It would

³⁴ Cox argues that the Commission should require the location of both the demarcation point and the MPOE at the property line. TR at 1821-1824; Collins Surreb. at 1. Further, under Cox's proposal building owners would be responsible for the installation and maintenance of facilities on their side of this demarcation point, i.e., the entire parcel of property, albeit a building, a campus setting, etc. TR at 1822-24.

³⁵ *See In re Promotion of Competitive Networks in Local Telecommunications Markets*, CC Docket Nos. 96-98, 88-57, 15 FCC Rcd 22983, FCC 00-366, Fifth Report and Order and Memorandum

also divest this Commission of any control over the prices charged to MDU dwellers, in that the Commission only has jurisdiction over common and contract carriers. The Commission could not ensure that property owners would use their newly acquired wire for the benefit of tenants, or that property owners would not discriminate between the carriers with which they choose to do business.³⁶

The FCC has mandated that MDU owners may request that incumbent LECs move the demarcation point to the MPOE. *See* Building Access Order at ¶ 54; 47 C.F.R. § 68.3(b)(2). Cox apparently seeks a ruling from this Commission setting the price for Qwest's campus wire and terminals when an MDU owner requests such relocation. In the event the Commission makes any determination with respect to such pricing, the appropriate measure of compensation for such transfer must be based on the fair market value of the property or, in the alternative, TELRIC.

VI. Loop Conditioning

The FCC has confirmed and re-confirmed the right of an ILEC to recover the cost of loop conditioning.³⁷ In spite of the FCC's clear stand on this issue, AT&T and XO claim that Qwest has no basis for proposing a loop conditioning charge. *See* AT&T/XO Br. at 38-39. Their

Opinion and Order in CC Docket No. 96-98, and Fourth Report and Order and Memorandum Opinion and Order in CC Docket No. 88-57 (rel. Oct. 25, 2000) ("Building Access Order") at ¶ 51-53.

³⁶ Cox ignores the fact that property owners are not "public service corporations" over which the Commission has jurisdiction. Moreover, it has been Qwest's experience that property owners often will oppose any attempt to relocate the demarcation point and reallocate the responsibility for facilities in the manner suggested by Cox. *See, e.g., Thomas R. LaVoie, Sr., et al. v. US WEST Communications, Inc.*, Docket No. T-1051B-99-0632, Decision No. 63134 (November 16, 2000). If adopted, Cox's proposal would raise serious issues of the Commission's jurisdiction, a lack of due process, and unconstitutional takings relative to these property owners.

³⁷ *See First Report and Order* at ¶ 382; *In the Matter of the Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, Third Report and Order and Fourth Further Notice of Proposed Rulemaking, FCC 99-238 (rel. Nov. 5, 1999) ¶ 192.

position clearly conflicts with the FCC's pronouncements and would deny Qwest the cost recovery that the Act requires.³⁸

Unlike AT&T and XO, Sprint does not challenge the right of Qwest to charge for loop conditioning but rather challenges the rate proposed. First, Sprint argues that Qwest should propose a separate rate for the conditioning of aerial and buried distribution. *See* Initial Brief of Sprint Communications, L.P. ("Sprint Br.") at 10. Qwest, however, does not expect to encounter a significant amount of aerial or buried cable unloading. *See* Ex. Qwest-18 (Million Reb.) at 11-12. Because the vast majority of unloading activity involves underground cable, there is no reason to establish different rates. *Id.*

Sprint also argues that Qwest's proposed rate for loop conditioning is higher than Sprint's rates. Sprint Br. at 11. Sprint's comparison, however, is inapposite. Sprint offers, by way of comparison, its "per loop" cost of conditioning a loop under 18,000 feet. Qwest's proposed rate is neither "per loop" nor "per location." Rather, Qwest's rate covers the unloading of up to 25 cable pairs, at as many locations as are necessary for a given pair. *See* Ex. Qwest-18 (Million Reb.) at 11-12, Ex. TKM-01R at 8. In fact, in many instances, Qwest's rate for loop conditioning will be significantly lower than Sprint's. By way of example, if Qwest were to unload 25 underground pairs at three different locations, the charge would be \$652.83. Under the same scenario, Sprint's charge would be \$1,439.19 (\$479.73 X 3 locations). *See* Ex. Qwest-18 (Million Reb.) at 12.³⁹

Finally, Sprint and AT&T/XO both argue that loop conditioning should be priced on a "per loop" basis. Sprint Br. at 11-12; AT&T/XO Br. at 38-39. In other words, they suggest that

³⁸ Qwest's response to AT&T/XO and Sprint's arguments are set forth in greater detail at pages 80-83 of Qwest Corporation's Post-Hearing Brief.

³⁹ The accuracy of this comparison was confirmed by Sprint's witness, Mr. Farrar, at the hearing. *See* Tr. at 1764-65 (Farrar Cross).

Qwest's rate, which encompasses the removal 25 load coils, should be divided by 25 in order to arrive at a "per loop" price. The problem with this approach is that the cost to Qwest is essentially the same whether Qwest removes 1 load coil or 25 load coils. The "cost causer" is the competitor who orders the first loop. Under Sprint's suggested pricing, Qwest could charge only 1/25 of the cost incurred for the first loop ordered. If orders for the remaining 24 loops were never placed, Qwest would be unable to recoup the outstanding cost.

VII. Collocation Costs and Rates

Qwest's collocation cost study is a comprehensive analysis that is built on the detailed labor and materials costs from 41 actual cageless collocation jobs. These recent, real costs provide the most complete and accurate basis from which to estimate the future replacement costs of collocation. Qwest Br. at 83-85. By contrast, the Joint Intervenors, primarily through WorldCom, rely primarily on guesswork.

A. Qwest's Collocation Study is Supported by Proper Documentation.

WorldCom argues that the invoices Qwest provided to support its installation work activities lacked sufficient detail. As examples, WorldCom cites to portions of the record claiming that Qwest witnesses were unable to explain the three-hour period required for installation set-up and that Qwest made not attempt to estimate standard hours and total charges. WorldCom Br. at 15. WorldCom's mischaracterization of the hearing testimony cannot withstand scrutiny.

Contrary to WorldCom's assertions, Qwest's witness, Robert Hubbard, provided a detailed explanation of the set-up for cable and/or fiber splicing:

There is quite a bit of set-up. First of all, it's usually in a manhole. You've got to set up the hole for protection. You've got to pump the water out of the hole. You've got to ventilate the hole, check for gas. You've got to basically pull – the fiber cables are usually pulled up because there's enough slack in them up and into the splicing van to prepare for the actual splicing activity and the opening of the cables . . . They [Qwest repairmen] open the cables, separate each individual fiber.

There are times you've got to clean the fiber itself off, set it up for a fusion splice, line it up in the fusion machine, and then cut it appropriately and then fuse the cable. And then also in that, there's also closing, placing the splice case after you're all done and closing the splice.

Tr. at 298-99 (Hubbard Cross). Ultimately, Ms. Million reviewed the back-up provided for the installation costs included in the cost study and estimated a 4-5 hour standard interval. Tr. at 865-866 (Million Cross). In addition, Qwest witness, Mr. Fleming, provided an analysis of Qwest invoices supporting the cost study, including installation intervals and labor rates. Ex. Qwest-8 (Fleming Reb.) at 51-54. Finally, the portion of the transcript that WorldCom cites does not support the claim that Qwest failed to verify the efficiency of its contractors. To the contrary, Mr. Fleming explained that Qwest's contracting group ensures that contractors are operating efficiently. Tr. at 414 (Fleming Cross).

B. Accounting for the Reusability of Collocation Facilities

WorldCom challenges Qwest's proposal to assess a nonrecurring charge for space construction, arguing that Qwest will experience "multiple cost recovery" when subsequent collocators occupy the same facilities. WorldCom Br. at 19-20.

The FCC has established that an ILEC may assess nonrecurring charges for equipment dedicated to a particular CLEC, regardless whether that equipment is reusable.⁴⁰ Moreover, experience shows that abandoned collocation installations in Arizona are not being reused. See Ex. Qwest-7 (Kennedy Reb.) at 18. In addition, Qwest accounted for reusability by establishing recurring charges for almost half of the costs of collocation.

⁴⁰ See Second Report and Order, *In the Matter of the Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 93-162, FCC 97-208 at ¶ 33 (rel. June 13, 1997) ("To the extent that the equipment needed for expanded interconnection service is dedicated to a particular interconnector, we believe that requiring that interconnector to pay the full cost of the equipment up front is reasonable because LECs should not be forced to underwrite the risk of investing in equipment dedicated to the interconnector's use, regardless of whether the equipment is reusable.") (emphasis added).

As Qwest witness, Robert F. Kennedy, explained in his rebuttal testimony and Mr. Hubbard explained at the hearing,⁴¹ Qwest introduced a collocation decommissioning policy to provide CLECs with an appropriate means by which to permanently vacate a collocation site. Under this policy, Qwest will reimburse the vacating CLEC for the reusable elements of the vacated site for up to one year after decommissioning.

Contrary to the fears of Time Warner Telecom of Arizona, LLC ("TWTC"), Qwest cannot unilaterally impose a new collocation decommissioning policy on CLECs. If this or any other new Qwest policy conflicts with the terms of an approved interconnection agreement, Qwest cannot implement it without the agreement of the CLEC or approval by this Commission. If a new Qwest collocation decommissioning policy does not actually conflict with the terms of an approved interconnection agreement, then the CLEC has the choice either to accept the terms and conditions of that new policy or to negotiate different terms and conditions. If the CLEC and Qwest cannot agree on different terms and conditions, either can invoke the dispute resolution provisions of their agreement. In no event can Qwest unilaterally impose new terms and conditions on any CLEC.

Qwest's proposed SGAT for Arizona makes crystal clear that it cannot unilaterally override existing interconnection agreements.⁴² Section 2.3 provides as follows:

⁴¹ Ex. Qwest-7 (Kennedy Reb.) at 16-17; Tr. at 312 (Hubbard Cross).

⁴² In response to a question as to whether Qwest's decommissioning policy "would take precedence over an interconnection agreement," Mr. Hubbard testified, "Either that or they have the option to opt into this policy." Tr. at 313 (Hubbard Cross). To the extent that this answer suggests that a decommissioning policy could override an existing interconnection agreement, this answer does not reflect Qwest policy. Mr. Hubbard is a network engineer and was not familiar with Qwest's policy concerning the relationship between Qwest's decommissioning policy and its obligations under existing and future interconnection agreements. Indeed, he acknowledged that he did not know whether Qwest's SGAT even addressed decommissioning. *Id.*

2.3 In cases of conflict between Qwest's wholesale Product Catalog (PCAT) (formerly IRRG), product descriptions, methods and procedures, technical publication, or any other document and this Agreement, the rates, terms and conditions of this Agreement shall prevail over such PCAT product descriptions, methods and procedures, technical publications or other document.

Thus, if a new Qwest policy, such as new decommissioning procedures, conflicted with the terms of an interconnection agreement, the terms of the interconnection agreement would prevail.

If there is no conflict between a new Qwest policy, such as a new decommissioning procedure, and the terms and conditions of an approved interconnection agreement, Qwest still cannot unilaterally impose that new policy on CLECs. Section 1.7.1 of Qwest's proposed SGAT in Arizona provides as follows:

1.7.1 Notwithstanding the above or anything contained in Section 1 of this Agreement, if the Commission orders, or Qwest chooses to offer and CLEC desires to purchase, new Interconnection services, access to additional Unbundled Network Elements, additional ancillary services or Telecommunications Services available for resale which are not contained in this Agreement, no formal amendment to the Interconnection agreement is necessary. Qwest will notify CLEC of the availability of these new services through the product notification process through the Co-Provider Industry Change Management Process (CICMP). CLEC must first update the relevant section(s) of the New Product Questionnaire to establish ordering and billing processes. Then by placing its orders, CLEC agrees to abide by all of the then current rates, terms and conditions as set forth in the then current template agreement applicable to such new services. If CLEC wishes to negotiate an amendment with different terms and conditions than defined in the then current template agreement, CLEC agrees to abide by those terms and conditions until the amendment is approved and a parallel processing letter agreement is executed.

This section provides a CLEC with two choices: (1) agree to Qwest's proposed terms and conditions for the new service or (2) negotiate an amendment with different terms and conditions. If the negotiations are unsuccessful, either party can invoke the dispute resolution provisions within Section 5.18 of the SGAT. Thus, contrary to TWTC's fears, even if there is no

conflict between a new Qwest decommissioning policy and existing interconnection agreements, Qwest cannot simply impose its new policy on a take-it-or-leave-it basis.

There is no need for the Commission to enter the order sought by TWTC. CLECs are adequately protected from any unilateral action by Qwest.

C. Floor Space Rental Cost

WorldCom claims that the floor space rent contains duplication in its HVAC and electrical costs, as well as costs associated with architectural fees, land costs, site work, landscaping, and Qwest project management as permitted by the *RS Means Construction Cost Data Book*.

As explained by Mr. Fleming, no such duplication exists. Tr. at 422 (Fleming Cross). Qwest included only that the costs of common building systems (e.g., light, power, HVAC, etc.) in the floor space rent. *Id.* As a result, these costs were specifically omitted from Qwest's space construction charge. *Id.* The space construction charge, in fact, reflects only those costs associated with physical changes necessary to make the collocation space itself suitable (e.g., the extension of cables to collocation cages, power cables, etc.). Tr. at 429-30 (Fleming Cross).

Moreover, Mr. Fleming affirmed that *RS Means* provides legitimate cost information, which in some cases was confirmed by additional data received from Qwest's real estate department. Tr. at 431-32 (Fleming Cross). Ultimately, Qwest made adjustments to arrive at the costs for a typical central office, and then deducted duplicative charges from the floor space rental fee. Tr. at 435-37 (Fleming Cross).

D. Power Costs

According to WorldCom, Qwest's costs for power and grounding cable are overstated. To support this claim, WorldCom misconstrues Qwest's data and singles out one example that is lower than the average costs found by Qwest. The evidence demonstrates that Qwest's data was taken directly from the actual receipts for the 41 jobs in Qwest's study, not the five

representative examples cited by WorldCom. Ex. Qwest-8 (Fleming Reb.) at 78. Further, just because one of the five examples contained rates lower than the average does not prove that this limited example is representative of Qwest's actual costs. Similarly, WorldCom's argument that the costs contained in the *RS Means* and *Cobra Cable and Wire* manuals should be utilized is not supported by any evidence that those rates reflect Arizona rates.

Additionally, WorldCom claims that Qwest's power cable lengths are overstated and inconsistent. As Qwest discussed in its post-hearing brief, its model assumptions reflect actual power cable lengths for Arizona collocation jobs. *Id.* at 79. Further, Joint Intervenor witness, Mr. Knowles, admitted that he had not conducted any study to determine whether Qwest's costs for power cable installation are different in Arizona than they are in the central offices included in the cost model. Tr. at 1658 (Knowles Cross).

WorldCom also asserts that the recurring power charges in Qwest's study are too high as compared to Qwest's own FCC tariff and power charges of other ILECs. However, the charges that WorldCom uses for this comparison have different structures and vintages and are not appropriate for comparison. Qwest's FCC tariff for virtual collocation relies on a completely different power charge system. In addition, other ILECs charge for fused amps, which are up to 100 percent higher than the amps-used number for which Qwest charges. WorldCom's comparison does not account for these material differences.

E. Terminations

WorldCom and Staff claim that Qwest's costs for certain termination blocks are excessive compared to the costs contained on the price lists of two suppliers -- Power Telephone Supply and Verizon Supply -- and to an outdated Qwest retail DSL study. The actual expenditures demonstrated by Qwest, however, are a better gauge of costs than these standardized price lists. Ex. Qwest-8 (Fleming Reb.) at 78. Qwest's updated DSL study also includes the same price that Qwest uses in the collocation study. Qwest Br. at 91.

F. Cable Racking and Sharing of Costs

According to WorldCom, Qwest should place CLEC equipment in the same manner in which it places its own equipment, thereby minimizing the amount of cable racking dedicated to any one collocator. WorldCom also argues that no cable racking or aerial support should be included in the costs for cageless collocation. For caged collocation, WorldCom asserts the 10% of the jobs will require major cable racking and aerial support and 20% will require some cable racking and aerial support. In several other areas, WorldCom asserts that Qwest cannot charge for existing infrastructure that collocators use.

Under TELRIC, a replacement collocator should pay for the cost of any cable racking used by the collocator regardless whether it was installed for that particular collocator. Under these principles, any cable racking used for CLEC-to-CLEC connections should also be included in a TELRIC study. As discussed in Qwest's post-hearing brief, there is no evidence that Qwest's use of previous collocation receipts and the averaging of the cost of those installations yielded higher costs than the use of a new central office. Qwest Br. at 83. Further, Qwest's current rate structure and the study used to calculate those rates assume average values for cable lengths and cable racking. The CLECs offered no proof that costs in a new central office would be any lower.

VIII. Line Sharing Costs and Rates

A. The Commission Should Establish a Price of \$5.00 for the High Frequency Loop.

Qwest's opening brief demonstrates that applicable legal and economic principles require setting a positive price for the high frequency portion of the loop. Qwest Br. at 97-103. In its post-hearing brief, Staff confirms its agreement with the principle that the high frequency loop should have a positive price. Staff Br. at 16.

Staff proposes that the price for the high frequency loop should be equal to 20 percent of the rate for the unbundled loop. In doing so, Staff acknowledges that the costs of the loop are

joint and common, which is the result of having two products -- the high frequency loop and the low frequency loop -- on the unbundled loop. Staff Br. at 16. Based on application of this 20 percent factor to Staff's statewide average rate for the unbundled loop of \$12.35, Staff proposes a rate of \$2.47 for the high frequency loop. *Id.* However, as demonstrated above, Staff's analysis of the costs of the unbundled loop is flawed, and the rate it proposes for the loop is significantly understated. If Staff's 20 percent factor were applied to a reasonable estimate of the cost of the loop, the resulting rate for the high frequency loop would be closer to the rate of \$5.00 that Qwest proposes.

Sprint argues that the Commission should set a price of \$0 for the high frequency loop, contending that requiring Qwest to provide this network element for free is required by "sound economic principles." Sprint Br. at 12. However, Sprint fails to address the FCC's requirement that rates for UNEs should reflect the rates that would be charged in a competitive environment. *See* Qwest Br. at 98. Basic economic principles establish that there would be a positive price for the high frequency loop in a competitive market, since this network element has a limited supply and a positive demand. *Id.* In addition, although it apparently does not contest the fact that the presence of the high frequency loop renders all loops costs joint and common, Sprint does not attempt to reconcile its proposal for a price of \$0 with the FCC's requirement that a reasonable allocation of common costs "*shall*" be included in UNE prices. *Id.* at 100 (emphasis added). Indeed, Qwest's proposal cannot be reconciled with this directive from the FCC.

Sprint also claims that a positive price for the high frequency loop will cause Qwest to recover more than the overall cost of the loop. Sprint Br. at 13. The premise for this claim is that Qwest is already recovering the full cost of the loop through its retail rates. Although Sprint makes that assertion, it cites no evidence to support it.

To determine whether Qwest is fully recovering the cost of the loop, it is necessary to analyze: 1) the actual cost of the loop network; 2) how Qwest's revenues recover this cost today; and 3) whether Qwest's revenues in the future will be sufficient to recover the cost of the loop.

Ex. Qwest-29 (Fitzsimmons Reb.) at 63. Neither Sprint nor any other CLEC addressed these issues in their evidence. However, Qwest demonstrated that there is substantial uncertainty concerning the extent to which its revenues in the future will contribute to the cost of the loop. With accelerating competition in local telecommunications, there is a legitimate concern that Qwest may not recover the full cost of its loop network, even with a positive price for the high frequency loop. *Id.* at 63-66.

Finally, Z-Tel argues incorrectly that the Commission is required to reduce the price of the unbundled loop by the amount of any positive price that it establishes for the high frequency loop. Z-Tel Br. at 9-10. When Qwest leases the high frequency loop to a CLEC, by definition, Qwest is providing voice service over the low frequency portion of the loop. Accordingly, when Qwest provides line sharing, it retains control over the low frequency loop and is not leasing the whole loop to any CLEC. Therefore, no CLEC is paying Qwest the rate for the unbundled loop, and there is no basis for the offset that Z-Tel advocates.

B. Staff's Claim that Qwest Discriminates Against Unaffiliated xDSL Providers is Incorrect.

Staff repeats its claim that Qwest discriminates against unaffiliated xDSL providers by allegedly giving preferential treatment to Qwest's affiliated xDSL provider, Broadband Services, Inc. ("BSI"). Staff Br. at 17-18. Qwest addressed this claim fully in its opening brief. Qwest Br. at 107-08.

In sum, the following facts refute Staff's claim: 1) Qwest's proposed permanent rate of \$37.71 for the shared loop will apply equally to BSI and the CLECs; 2) the interim nonrecurring charge of \$80 to which Staff refers is a rate that the CLECs negotiated with Qwest and, therefore, cannot be applied to BSI under the affiliate transaction rules; 3) Qwest currently charges BSI based on fully distributed actual costs, meaning that BSI does not receive the economic benefit of forward-looking TELRIC costs that Qwest uses for CLECs; 4) BSI does not pay the splitter collocation charges that apply to CLECs because it has chosen not to collocate splitters in

Qwest's central offices for its video services, an option that also is available to the CLECs; 5) BSI pays \$7.67 for the high frequency loop, which is more than Qwest proposes to charge the CLECs; and 6) BSI pays up-front charges for OSS access, while Qwest is seeking to recover OSS costs associated with line sharing through recurring charges. Qwest-18 (Million Reb.) at 59-65.

IX. Market-Based Prices

WorldCom contends that the fact that Qwest set forth market-based rates in this proceeding is contrary to the position Qwest took in the retail rate case settlement. The settlement agreement merely provides that Basket 2 services are primarily wholesale in nature and generally governed by their own specific pricing rules. Decision No. 63487 p. 5, lns. 21-26. To the extent that the FCC has authorized rate for certain interconnection services and UNEs band or something other than TELRIC, Qwest's proposal here meets the "specific pricing rules" established by the FCC.

WorldCom objects to Qwest's customized routing charges to the extent that such charges are already included in the switching services. According to WorldCom, Qwest failed to provide enough documentation in order to determine whether there is duplication of charges. As WorldCom acknowledges, customized routing will be addressed in Phase II B of this docket. Therefore, Qwest does not believe it is appropriate to address WorldCom's concern at this time.

Notwithstanding the foregoing, the FCC's UNE Remand Order⁴³ establishes that an ILEC is not required to unbundled Directory Assistance and Operator Services except in the limited circumstances where the ILEC does not provide customized routing to allow a requesting provider to route traffic to alternative providers. Ex. Qwest-15 (Brotherson Reb.) at 2. The testimony of Qwest witnesses, Barbara Brohl and Kathy Malone, demonstrate that Qwest

⁴³ UNE Remand Order at ¶¶ 441-442.

provides efficient customized routing so that UNE entrants can direct their operator and directory traffic to alternative providers. Ex. Qwest-12 (Brohl Reb.) at 3-5; Tr. at 559-563 (Malone Direct). The fact that Qwest offers an Individual Case Basis ("ICB") pricing structure for custom routing does not establish that Qwest is not offering the product.

Qwest does offer custom routing and therefore is entitled to set rates for Directory Assistance and Operator Services at prices other than TELRIC in a competitive environment. The Act's requirement of cost-based rates applies to network elements that ILECs are required to unbundled. Brotherson Reb. at 2. Moreover, the FCC's UNE Remand Order recognizes that Directory Assistance and Operator Services are competitive services. As the FCC stated, "Obligations that do not fall with a BOC's obligations to provide unbundled network elements are not subject to the requirements of Sections 251 and 252, including the requirement that rates be based on forward looking costs."⁴⁴ *Id.* Because the FCC has excluded Directory Assistance and Operator Service from the UNEs that ILECs must unbundled, the Commission should adopt Qwest's market-based rates proposed for these services. *Id.* Market-based pricing in itself establishes just and reasonable rates. In a competitive market, a provider will not be able to compete if rates are too high.

X. Conclusion

For the reasons stated, Qwest requests that the Commission adopt the costs and rates that Qwest has proposed.

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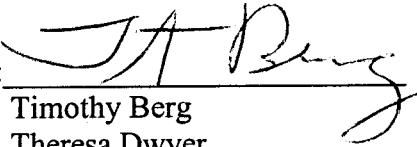
⁴⁴ *In the Matter of Application of SBC Communications, Inc. Pursuant to Section 271 of the Telecommunications Act of 1996*, FCC, CC Docket No. 00-65, Memorandum Opinion and Order ¶ 348 (June 30, 2000).

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Respectfully submitted,

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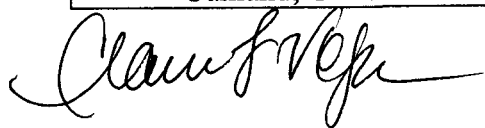
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